

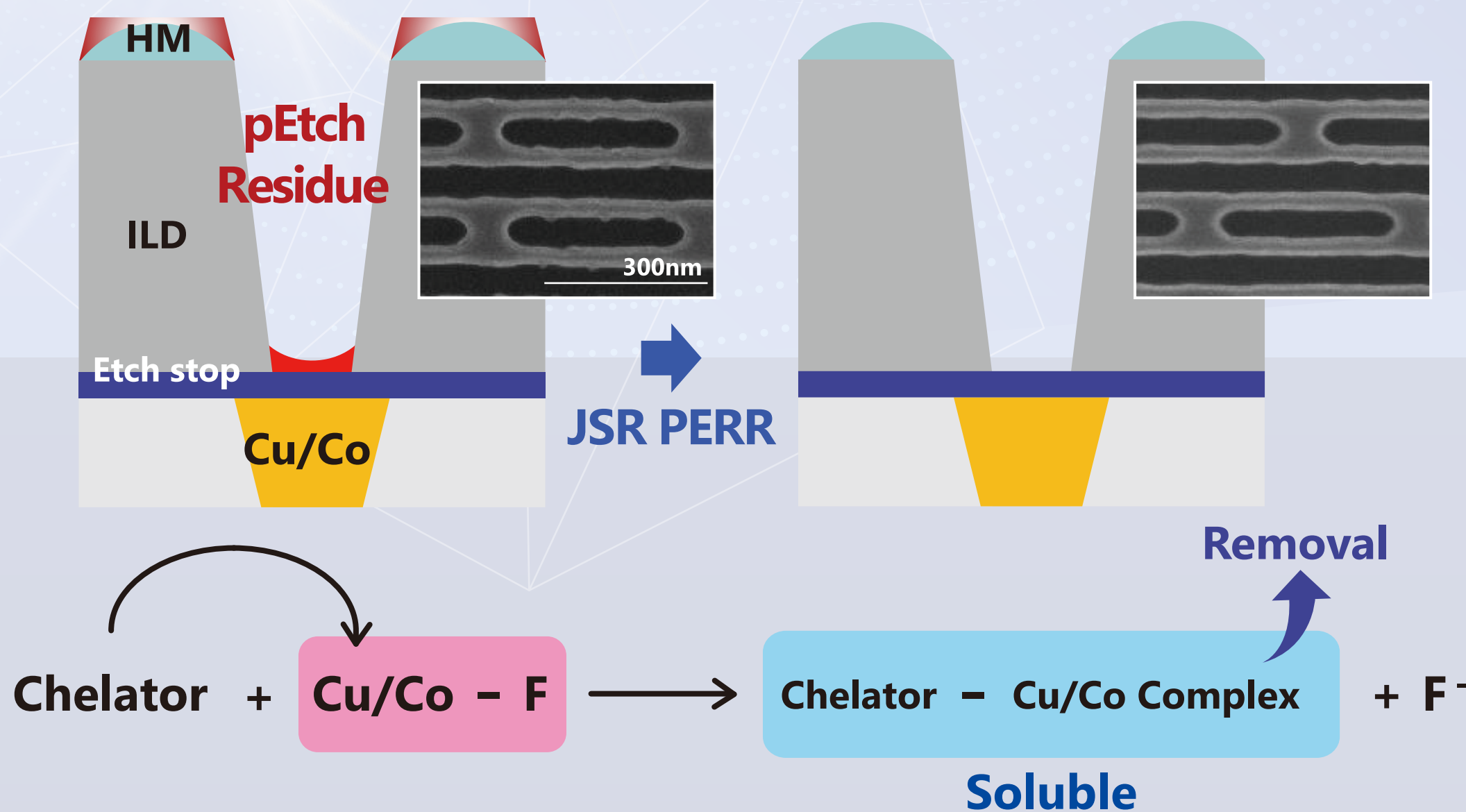
# JSR Advanced Wet Chemical

## PERR – Cu/Co Clean

PERR: Post-Etch Residue Remover

### Balanced etching by combination of Etchant and Chelator

- ✓ The Inhibitor effectively protects Cu and Co surface
- ✓ Etchant selectively removes CF residue and Metal-Ox



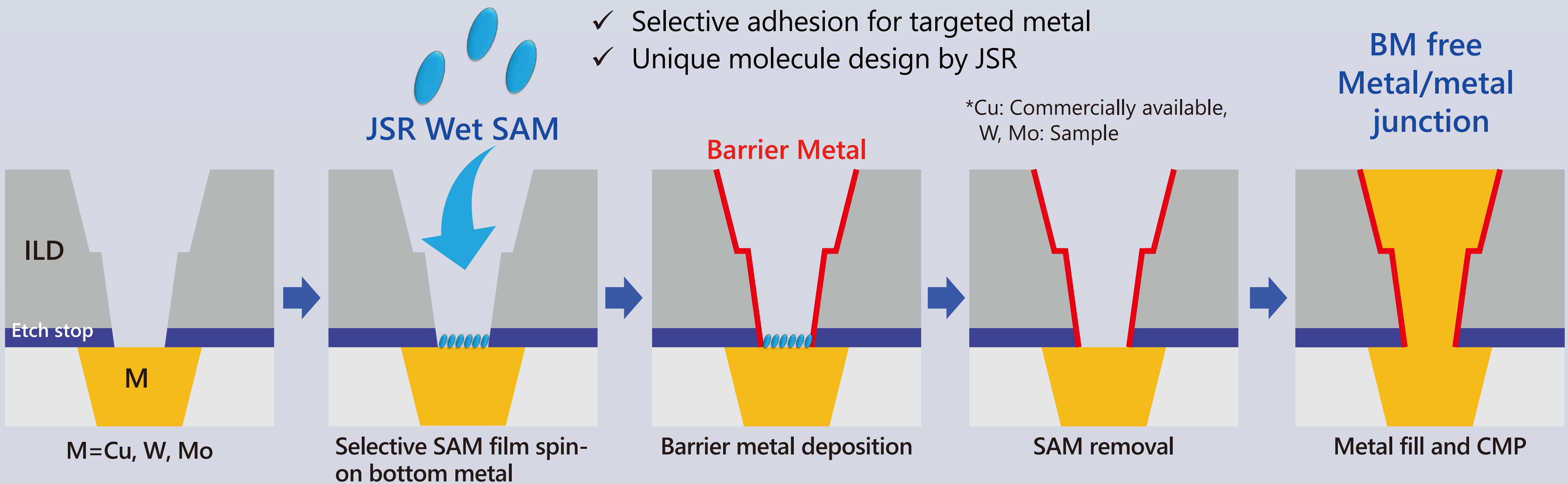
| Component                  |                 | JSR PERR         |
|----------------------------|-----------------|------------------|
| pH                         |                 | Neutral          |
| Residue/ AlOx Etchant      |                 | Fluoride Etchant |
| Solvent                    |                 | <10%             |
| Physical Properties (25°C) | Viscosity       | 1.1 cP           |
|                            | Surface tension | 30-40 mN/m       |
| Etching behavior           | PER             | Remove           |
|                            | Cu              | No damage        |
|                            | Co              |                  |
|                            | ILD             |                  |
|                            | TEOS            |                  |

## Wet SAM

SAM: Self-Aligned Monolayer

### Selective metal protection by quick wet process

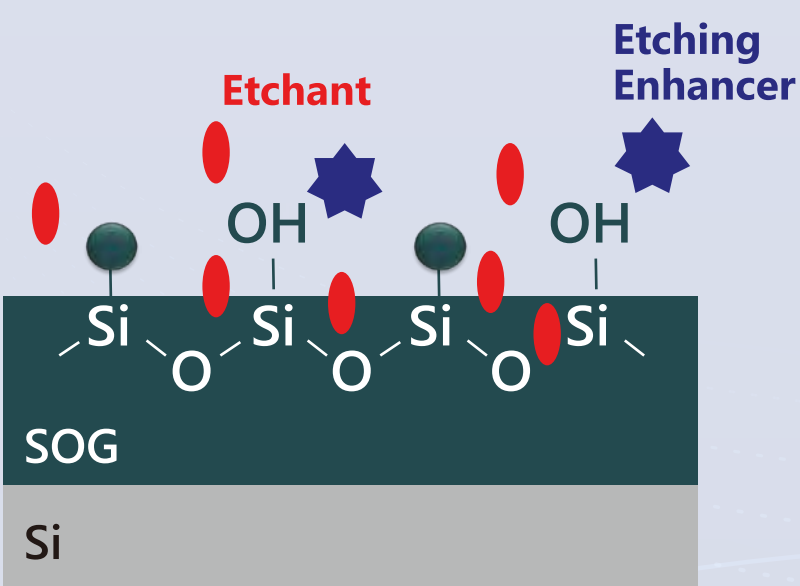
- ✓ Selective adhesion for targeted metal
- ✓ Unique molecule design by JSR



## SOG Remover

### Selective SOG removal Compatible with other films

- ✓ Etching enhancer weakens Si-O bonding
- ✓ Etchant is absorbed into SOG film

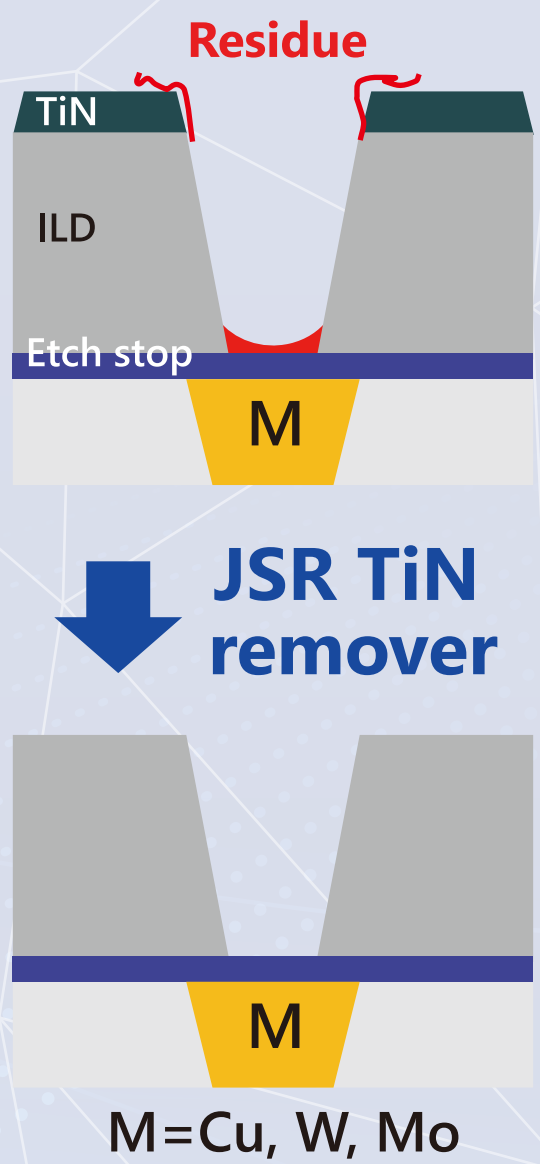


| Component        |     | JSR SOG Remover |
|------------------|-----|-----------------|
| pH               |     | Alkaline        |
| Etching behavior | SOG | Remove          |
|                  | SOC | No damage       |
|                  | ILD |                 |
|                  | SiN |                 |

## TiN Remover

### TiN hardmask removal Compatible with metals

- ✓ Applicable for TiN remove / pull-back
- ✓ JSR's metal inhibitors selectively protect each metals



| Component        |     | JSR TiN Remover |
|------------------|-----|-----------------|
| pH               |     | depends         |
| Etching behavior | PER | Remove          |
|                  | TiN |                 |
|                  | ILD |                 |
|                  | ES  | No damage       |
|                  | Cu* |                 |
|                  | W*  |                 |
|                  | Mo* |                 |

\*Cu: Commercially available, W: Sample, Mo: R&D